



# Fact Sheet

NPDES Permit Number: WAG-XXXXXX-X  
Date: XXXX, 2004  
Public Notice Expiration Date: XXXX  
Technical Contact: XXXX

## **The U.S. Environmental Protection Agency (EPA) Plans To Issue A General Wastewater Discharge Permit for Discharges from Fish Hatcheries Located on Tribal and Federal Lands in Washington**

### **EPA Proposes NPDES Permit Issuance.**

EPA proposes to issue a National Pollutant Discharge Elimination System (NPDES) General Permit to establish conditions for the discharge of pollutants with wastewaters from fish hatcheries on tribal and federal lands to waters of the United States within the State of Washington. Discharges of such wastewaters are currently covered by individual NPDES permits issued by EPA Region 10. In order to ensure protection of water quality and human health, the General Permit places limits on the types and amounts of pollutants that can be discharged and places other conditions on such activity.

This Fact Sheet includes:

- \$ information on public comment, public hearing, and appeal procedures
- \$ a description of the industry
- \$ a description of proposed permit conditions
- \$ technical discussion supporting the conditions in the permit
- \$ a list of known facilities subject to the General Permit

### **Tribal and State Certification**

EPA requires that the State of Washington and the affected tribes, which have met the criteria of the Clean Water Act (CWA) for treatment as states [33 U.S.C. § 1377 (d)], certify the NPDES General Permit under Section 401 of the CWA. EPA may not issue the permit until the State and the affected tribes have granted or waived certification.

## **EPA Invites Public Comment**

EPA will consider all comments before issuing a final NPDES permit. Those wishing to comment on the proposed permit may do so in writing by XXXX, 2004. Written comments should include a name, address, phone number, a concise statement or comment, and any relevant factual basis for the statement or comment. Written comments should be addressed to the Director, Office of Water, U.S. EPA Region 10, 1200 Sixth Avenue, OW-130, Seattle, WA 98101 and can be submitted by fax to 206-553-0165 or by e-mail to XXXX@epa.gov.

Persons wishing to comment on state or tribal certification should submit written comments before the public notice expiration date to Sharon Wilson of EPA Region 10 at the NPDES Permits Unit, EPA Region 10, 1200 Sixth Avenue, OW-130, Seattle, WA 98101 or via e-mail at Wilson.Sharon@epa.gov.

The General Permit will become effective 30 days after publication of the final General Permit in the Federal Register in accordance with Section 553 (d) of the Administrative Procedure Act.

## **Documents Are Available for Review.**

The proposed NPDES permit, Fact Sheet, and related documents can be reviewed at EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday. These materials are also available for public review and copying at the following locations in Washington.

Northwest Indian Fisheries Commission  
6730 Martin Way East  
Olympia, WA 98516

The draft permit and Fact Sheet can also be found by visiting the EPA Region 10 website at [www.epa.gov/r10earth/offices/water/npdes.htm](http://www.epa.gov/r10earth/offices/water/npdes.htm).

## TABLE OF CONTENTS

I.....	INTRODUCTION	1
A.....	Industry Description	1
B.....	Characterization of Discharges	2
II.....	PERMIT COVERAGE	3
A.....	EPA General Permit Authority	3
B.....	Facilities and Discharges Covered	3
C.....	Facilities and Discharges Not Covered	3
D.....	Permit Expiration	4
III.....	NOTICE OF INTENT (NOI) REQUIREMENTS	4
A.....	NOI Submittal	4
B.....	Individual Permits	5
IV.....	RECEIVING WATERS	6
A.....	General	6
B.....	Beneficial Uses	6
C.....	Water Quality Criteria	7
D.....	Impaired Waters / TMDLs	7
V.....	EFFLUENT LIMITATIONS	7
A.....	General Approach To Determining Effluent Limitations	7
B.....	Anti-Degradation Policy	8
C.....	Evaluation of Technology-Based Limitations	8
D.....	Evaluation of Water Quality-Based Limitations	16
E.....	Proposed Effluent Limitations and Requirements for Discharges from Fish Hatcheries Located on Tr	
VI.....	MONITORING AND REPORTING REQUIREMENTS	19
A.....	Effluent Characterization Study	19
B.....	Routine Monitoring Requirements	20
VII.....	POLLUTION PREVENTION PRACTICES	21
VIII.....	STANDARD PERMIT PROVISIONS	21
IX.....	OTHER REQUIREMENTS	22
A.....	Endangered Species Act	22
B.....	Magnuson - Stevens Fishery Conservation and Management Act	23
C.....	National Environmental Policy Act (NEPA)	23
D.....	State Certification	23

X.....	REFERENCES	24
Appendix A-basis for Effluent Limitations .....		25
Appendix B-derivation of Copper and Chlorine Limits .....		35

## LIST OF ACRONYMS

APA	Administrative Procedures Act
BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BPT	Best Practicable Control Technology Currently Available
BMP	Best Management Practices
BPJ	Best Professional Judgment
CAAP	Concentrated Aquatic Animal Production
CFR	Code of Federal Regulations
CSU	Conservation System Unit
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DOE	(Washington) Department of Ecology
EFH	Essential Fish Habitat
ELG	Effluent Limitations Guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FDA	U.S. Food and Drug Administration
FR	Federal Register
GP	General Permit
NMFS	National Marine Fisheries Service (NOAA Fisheries)
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency (EPA)
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WAC	Washington Administrative Code
WET	Whole Effluent Toxicity
WLA	Waste Load Allocation
WQBEL	Water Quality Based Effluent Limitation

## I INTRODUCTION

### A. Industry Description

At 40 CFR 122.24, EPA defines concentrated aquatic animal production (CAAP) facilities as point sources subject to the NPDES permit program and further defines such a facility as a hatchery, fish farm, or other facility that contains, grows, or holds:

1. Cold water fish species or other cold water aquatic animals in ponds, raceways, or other similar structures which discharge at least thirty days per year but does not include:
  - a. Facilities that produce less than 20,000 pounds of aquatic animals per year, and
  - b. Facilities that feed less than 5,000 pounds of food during the calendar month of maximum feeding.
2. Warm water fish species or other warm water aquatic animals in ponds, raceways, or other similar structures which discharge at least thirty days per year but does not include:
  - a. Closed ponds that discharge only during periods of excess runoff, or
  - b. Facilities that produce less than 100,000 pounds of aquatic animals per year

Cold water aquatic animals include, but are not limited to, the Salmonidae family of fish, such as trout and salmon; and warm water aquatic animals include, but are not limited to, catfish, sunfish, and minnows. The proposed General Permit will apply to facilities that produce or hold either cold or warm water species, and it will apply to all such facilities regardless of production size.

CAPP facilities use several production systems, including ponds, flow through systems, recirculating systems, and open water (net pen) systems. Pond systems, which are generally used for production of warm water species, are usually aerated and characterized by the lack of a continuous discharge. Infrequent discharges may occur as a result of a storm event or draining for harvest or repairs. Due to decomposition of biological material by planktonic species and settling of solids (feces, uneaten feed, and sediment), ponds are capable of treating and removing pollutants in the system; and when discharges occur, pollutant loads are often significantly reduced and contained within the pond sediment. Management practices to minimize the discharge of pollutants from pond systems focus on minimizing disturbance of sediments, reducing drainage frequency, managing water levels, minimizing erosion in and around pond banks, feed management, and the proper use and storage of chemicals and therapeutic agents.

Flow through production systems provide an environment that imitates the natural environment. In such systems, fresh water, diverted from streams and/or wells, enters continuously at the top of the system near the water source. Smaller, younger fish are typically held at the top of the system near the water source, which is the highest quality water. As fish grow, they can tolerate lesser quality water, and they are moved to downstream units. The most significant pollutants discharged from flow through systems are solids from uneaten feed and feces, which are primarily organic matter with high BOD and organic nitrogen and phosphorous contents. Some flow through systems have in line settling capability to treat the full flow of the facility; and others have quiescent

zones which allow solids to settle for collection and transfer to offline settling basins and lagoons.

Recirculating production systems utilize tanks with continuously flowing water and sidestream treatment technologies, which continuously treat a portion of the flow and return it to the production system. Due to high capital costs, such systems are used infrequently and generally for high valued species.

Net pen and open water systems take advantage of an existing water body's circulation to wash away wastes and bring fresh water to the animals. Net pens, which are used primarily to grow finfish to food size, are typically suspended from a floating structure and anchored to the sea floor, while allowing some movement with tides and currents. Uneaten feed and feces contribute solids, BOD, and nutrients directly to the water column from such systems.

#### B. Characterization of Discharges

CAAP facilities may discharge a variety of pollutants attributed to: (1) feeds, directly or indirectly (feces), (2) residuals of drugs used for maintenance of animal health, and (3) residuals of chemicals used for cleaning equipment or for maintaining or enhancing water quality conditions.

CAAP facilities may generate and/or contribute significant amounts of nutrient (nitrogen and phosphorous) and solids to receiving waters. These pollutants have the potential to contribute to a number of water quality impacts related to eutrophication - algal blooms, increased turbidity, low dissolved oxygen and associated stresses to stream biota, increased water treatment requirements, changes in benthic fauna, and stimulation of harmful microbial activity. In addition, the potential discharge of chemical and drug residuals raises concerns for toxicity of the discharges and the promotion of resistance to antibiotics.

The U.S. Food and Drug Administration (FDA) Center for Veterinary Medicine regulates animal drugs under the Federal Food, Drug, and Cosmetic Act (FFDCA). Extensive toxicity studies are required prior to drug approval from the FDA; however, limited data on potential environmental effects is available for some medications that are currently authorized for investigational use; and limited or no data is available characterizing the ecological significance of releases of drugs and chemicals at aquaculture facilities in the United States. EPA recognizes, however, the general concerns with residual antibiotics and pesticides in the environment. Such residual materials may pollute receiving waters and immunize the organisms they are designed to control. These effects can be distributed well outside of the original areas of application. In addition, pesticides, such as a variety of copper compounds, can impair aquatic organisms in receiving waters depending on the rates applied and the rate of breakdown of the product or of the active ingredient.

CAAP facilities are not considered to be significant sources of pathogens that affect human health.

## II PERMIT COVERAGE

#### A. EPA General Permit Authority

EPA retains authority to administer the NPDES program on tribal and federal land in Washington. The NPDES program implements the CWA's prohibition on unauthorized discharges by requiring a permit for every discharge of pollutants from a point source to waters of the United States. Although NPDES permits are typically issued to individual dischargers, a general permit may be issued to cover a category of discharges within an existing political boundary, in accordance with 40 CFR 122.28 (a), that:

1. involve the same or substantially similar types of operations,
2. discharge the same types of waste,
3. require the same effluent limitations,
4. require the same or similar monitoring, and
5. are more appropriately controlled under a general permit than under individual permits.

#### B. Facilities and Discharges Covered

The General Permit will apply to all CAAP facilities that discharge to waters of the United States and that are located on tribal or federal land within the State of Washington. CAAP facilities will be authorized to discharge under the General Permit regardless of production capability, type of species being reared, type of production system, or whether discharges are to fresh or marine waters. Only discharges through discreet outfalls from such facilities to waters of the United States will be authorized by this permit.

#### C. Facilities and Discharges Not Covered

1. The General Permit will not apply to discharges that do not consist solely of effluent from CAAP production facilities. If a discharge from a CAAP facility mixes with other wastewater (e.g., domestic wastewater) prior to being discharged, the combined discharge is not covered.
2. The General Permit will not apply to discharges subject to existing Effluent Limitations Guidelines promulgated pursuant to Section 306 of the CWA.
3. The General Permit will not apply to discharges from facilities where an NPDES permit has been terminated or denied.
4. The General Permit will not apply to discharges that will adversely affect a listed endangered or threatened species or its critical habitat.
5. The General Permit will not apply to discharges that contribute or may reasonably be expected to contribute to a violation of an applicable water quality standard.
6. The General Permit will not apply to discharges to impaired waters, designated as such pursuant to Section 303 (d) of the CWA, or to receiving waters on tribal land that are one mile or less upstream to an impaired water, designated as such pursuant to Section 303 (d) of the CWA.

7. The General Permit will not apply to discharges from processes not associated with concentrated aquatic animal production nor to discharges from CAAP processes where the General Permit does not adequately address the environmental concerns associated with the discharge.
8. The General Permit will not apply to discharges to land or to publicly owned treatment works or to lakes (reservoirs with a mean detention time greater than 15 days).
9. The General Permit will not apply to facilities that discharge to waters that constitute an outstanding national resource such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance.
10. The General Permit will not apply to facilities that discharge to waters that constitute special resource waters on tribal land - waters that comprise a special and/or a unique resource to the Reservation.

**D. Permit Expiration**

This General Permit will expire five years after its effective date. In the event the permit is not reissued before its expiration date, in accordance with 40 CFR 122.28 (b)(1) and 40 CFR 124, the General Permit will continue in force and effect until a new General Permit is issued. Only those facilities authorized to discharge under the expiring General Permit, and who submit a Notice of Intent (NOI) at least 180 days prior to expiration of the General Permit will remain authorized to discharge under the administratively extended permit.

### **III. NOTICE OF INTENT (NOI) REQUIREMENTS**

**A. NOI Submittal**

In accordance with EPA regulations at 40 CFR 122.28, dischargers seeking coverage under the General Permit must submit a written NOI to be covered by the General Permit. Except for dischargers notified of authorization in accordance with provision I. A. 2 of the General Permit, a discharger who fails to submit an NOI in accordance with relevant provisions of the General Permit will not become authorized to discharge under its terms.

An NOI form is contained in Attachment A of the General Permit. The form requires submittal of information necessary for adequate permit administration, including, at a minimum, the legal name and address of the owner or operator, the facility name and address, the type of facility or discharge, and the receiving waterbody. All NOIs must be signed in accordance with 40 CFR 122.22.

**B. Individual Permits**

Owners or operators meeting the criteria for coverage by the General Permit may be excepted from coverage by applying to the Director of the Office of Water, EPA Region 10 for an individual permit. This request must be made by submitting an NPDES permit application, together with supporting documentation, at least 180 days prior to expiration of an individual permit or at least 180 days prior to the commencement of operation of a new source or new discharge.

An owner or operator seeking authorization or authorized by the General Permit may be required to apply for and obtain an individual permit in the following circumstances.

1. When the single discharge or the cumulative effect of multiple discharges are a significant contributor of pollution,
2. Whenever the discharger is not in compliance with the conditions of the General NPDES Permit;
3. Whenever a change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source;
4. If effluent limitation guidelines are promulgated for point sources covered by the General Permit,
5. If a water quality management plan containing requirements applicable to such point source is approved; or
6. If circumstances have changed since the time of request to be covered so that the discharger is no longer appropriately controlled under the General Permit, or either a temporary or permanent reduction or elimination of the authorized discharge is necessary; or if the discharge is a significant contributor of pollutants, taking into account the location and size of the discharge and the quantity and nature of the pollutants.

A violation of a condition contained in the General Permit constitutes a violation of the CWA and subjects the owner or operator of the permitted facility to the penalties specified in Section 309 of the Act, as amended by the Debt Collection Improvement Act (31 U.S.C. §§3701 - 3720).

#### **IV. RECEIVING WATERS**

##### **A. General**

Receiving waters are waters of the United States located on tribal and federal lands within the State of Washington. States, including eligible Indian Tribes, must establish water quality standards for receiving waters within their jurisdictions. Water quality standards are composed of designated water uses to be achieved and protected, as well as water quality criteria necessary to protect designated uses.

##### **B. Beneficial Uses**

At 40 CFR 131.10, EPA requires states and eligible Indian Tribes to specify appropriate water uses to be achieved and protected. In designating uses of a water body and the

appropriate criteria for those uses, states and eligible Indian Tribes must take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for attainment and maintenance of the water quality standards of downstream waters.

Several tribes within the State of Washington have developed water quality standards (beneficial uses and water quality criteria); however, only the Colville Confederated Tribes have EPA approved, water quality standards in place. These standards, applicable to waters within the Colville Indian Reservation and published at 40 CFR 131.35, describe several use classifications - Class I (extraordinary), Class II (excellent), Class III (good), Class IV (fair), Lake Class, Special Resource Water Class, General Classifications, and Specific Classifications; and several uses within each classification. The Makah and Tulalip Tribes have also adopted water quality standards; however, these standards have not yet been approved by EPA in accordance with 40 CFR 131.5.

In developing the General Permit, EPA has also given consideration to water quality standards of the State of Washington, Chapter 173-201A of the Washington Administrative Code, because these standards are applicable to most waters adjacent to or downstream of the CAAP facilities, which will likely become authorized to discharge under the General Permit.

Washington State standards, at WAC 173-201A-200 (fresh water) and WAC 173-201A-210 (marine water), establish aquatic life, recreation, water supply, shellfish harvesting, and miscellaneous uses, and, at WAC 173-201A-600 (fresh water) and WAC 173-201A-610 (marine water), designate uses for specific waters in the State. All fresh waters without specific use designations are to be protected for the designated uses of:

- § Salmon and trout spawning, noncore rearing, and migration,
- § Primary contact recreation,
- § Domestic, industrial, and agricultural supply,
- § Stock watering, wildlife habitat,
- § Harvesting,
- § Commerce and navigation,
- § Boating, and
- § Aesthetic values

The following fresh waters without specific use designations are to be protected for the designated uses of salmon and trout spawning, core rearing, and migration, and extraordinary primary contact recreation:

- § Surface waters within national parks, national forests, and/or wilderness areas,
- § Lakes and feeder streams to lakes,
- § Surface waters that are tributaries to waters designated salmon and trout spawning, core rearing, and migration, or extraordinary primary contact recreation, and
- § All fresh surface waters that are tributaries to extraordinary quality marine waters.

### C. Water Quality Criteria

EPA has considered several sets of water quality criteria, including applicable tribal criteria and those of the State of Washington, in developing the General Permit.

#### D. Impaired Waters/TMDLs

Section 303 (d) of the CWA requires states and eligible Indian Tribes to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations by point sources. For all 303 (d)-listed water bodies and pollutants, the NPDES authority must develop and adopt Total Maximum Daily Loads (TMDLs) that will specify wasteload allocations for point sources and load allocations for non-point sources, as appropriate.

EPA has approved the State's 1998 303 (d) list of impaired water bodies, which is available online at <http://www.ecy.wa.gov/programs/wq/303d/>. Certain receiving waters in the State that do not fully support beneficial uses have been scheduled for TMDL development. The extensive 303 (d) list is not presented in this Fact Sheet; however, it must be consulted by applicants for coverage under the General Permit, as the General Permit will not apply to discharges to impaired waters, or, for tribal facilities, if the receiving water is one mile or less upstream of an impaired stream segment.

### V. EFFLUENT LIMITATIONS

#### A. General Approach To Determining Effluent Limitations

Sections 101, 301, 304, 308, 401, 402, and 403 of the CWA provide the basis for effluent limitations and other conditions in the draft permit. EPA has evaluated possible discharges from CAAP facilities with respect to these sections of the CWA and relevant NPDES implementing regulations to determine what conditions and requirements to include in the draft permit.

In general, the CWA requires effluent limits that are the more stringent of either technology-based or water quality-based limitations. Technology-based effluent limits are based on a minimum level of treatment for point sources provided by currently available treatment technologies. Water quality-based effluent limits (WQBELs) are developed to ensure that applicable water quality standards for receiving waters are met. The derivation of technology and WQBELs of the proposed permit is described in greater detail in Appendix A of this Fact Sheet.

#### B. Anti-Degradation Policy

To prevent degradation of water quality, at 40 CFR 131.12, EPA requires states and eligible Indian Tribes to adopt and implement anti-degradation policy consistent with the following guidelines.

1. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
2. Where the quality of water exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and

protected, unless a lower water quality is necessary to accommodate important economic or social development.

3. Where high quality waters constitute an outstanding national resource, such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

The proposed General Permit has been written to be consistent with the guidelines presented at 40 CFR 131.12.

#### C. Evaluation of Technology-Based Limitations

Section 301(b) of the CWA requires industrial dischargers to meet technology-based effluent guidelines, established by EPA, which are enforceable through their incorporation into an NPDES permit. The 1972 amendments to the CWA established a two-step approach for imposing technology-based controls. In the first phase, industrial dischargers were required to meet a level of pollutant control based on the best practicable control technology currently available (BPT). The second level of pollutant control was based on the best available technology economically achievable (BAT). And in 1977, enactment of Section 301(b)(2)(E) of the CWA allowed the application of best conventional pollutant control technology (BCT) to supplement BPT standards for conventional pollutants with cost effectiveness constraints on incremental technology requirements that exceed BPT. The BPT/BAT/BCT system of standards does not apply to a new source, defined by EPA as a source, the construction of which commenced after publication of proposed regulations prescribing a standard of performance, which will be applicable to the source. Direct dischargers that are new sources must meet new source performance standards (NSPS), which are based on the best available demonstrated control technology.

On June 30, 2004 EPA finalized technology-based Effluent Limitations Guidelines for the Concentrated Aquatic Animal Production Point Source Category. These regulations, to be codified at 40 CFR 451, became effective on August 29, 2004. EPA has included the requirements of these guidelines and standards in developing the technology based limitations of the General Permit. EPA has also given consideration to the Upland Finfish Hatching and Rearing General NPDES Permit, issued by the State of Washington's Department of Ecology (Ecology) in 2000 and Ecology's technology based, minimum discharge standards for upland and marine finfish facilities at WAC 173-221A-100 and WAC 173-221A-110. EPA has also examined General Permit Number ID-G13-0000, issued in 1999 by EPA Region 10 for Aquaculture Facilities in Idaho and General Permit No. 300J, issued in 2002 by the Oregon Department of Environmental Quality (DEQ). Limitations and other requirements of these guidelines, standards, regulations, and permits are described below.

1. *Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category.* 40 CFR 451.

Although the NPDES permit program applies to all discharges from concentrated aquatic animal production facilities, as defined at 40 CFR 122.24; only those facilities that produce, hold, or contain 100,000 pounds or more of fish during any twelve month period

are subject to the Effluent Limitations Guidelines for the Concentrated Aquatic Animal Production Point Source Category. The Effluent Limitations Guidelines include narrative effluent limitations for flow through and recirculating production facilities and for net pen production facilities, as well as general reporting requirements for all facilities subject to the rule. The Effluent Limitations Guidelines do not include any numerical limitations for specific pollutants.

The rule defines flow-through systems as those designed to discharge continuously through production units - typically raceways or tanks. Some flow through systems are full-flow, discharging a single combined effluent stream with large water volumes and dilute pollutant concentrations. Others have two or more discharge streams, with the primary discharge being the bulk flow through production units, and secondary discharges typically being from off-line solids removal systems. Recirculating systems reuse water in the production units but use filtration or settling to remove solids. Such systems may have two discharge streams - overtopping or blowdown, which prevents the concentration of dissolved solids, and filter backwash generated by filter cleaning. Net pen systems are defined as stationary, suspended, or floating systems of nets, screens, or cages in open waters. Such systems rely on tides and currents to provide a continual supply of high quality water to the production activity.

All dischargers that produce above the production threshold of 100,000 pounds must report the following events to the permitting authority.

- a. The use of an investigational new animal drug (INAD) or any extra-label drug, which may lead to the discharge of the drug to waters of the United States. This reporting is not required for an INAD or an extra-label drug that has been previously approved by the Food and Drug Administration (FDA) for a different species or disease, if it is used at or below the previously approved dose rate and involves similar conditions of use.
- b. Failure of or damage to a containment system that results in unanticipated discharges of pollutants to waters of the U.S.
- c. Spills of drugs, chemicals, or feed that result in discharges to waters of the U.S.

Dischargers from flow through and recirculating systems must develop and maintain a Best Management Practices (BMP) Plan, which addresses the following activities at the facility. These management practices represent the application of BPT, BAT, BCT, and NSPS for the industry.

- a. Solids control. The discharger must employ efficient feed management and feeding strategies; identify and implement procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharge of accumulated solids during the inventorying, grading, and harvesting of aquatic animals in the production system; and remove and dispose of aquatic animal mortalities on a regular basis.
- b. Materials storage. The discharger must properly store drugs, pesticides, and feed in a manner to prevent spills, and implement procedures for containing, cleaning, and disposing of any spilled material.

- c. Structural maintenance. The discharger must inspect, conduct regular maintenance of, and repair the production and wastewater treatment systems on a routine basis.
- d. Recordkeeping. The discharger must document feed amounts and numbers and weights of aquatic animals to calculate feed conversion ratios, and document the frequency of cleanings, inspections, maintenance, and repairs.
- e. Training. The discharger must train personnel in spill prevention and response and on the proper operation and cleaning of production and wastewater treatment systems.

Dischargers from net pen systems must develop and maintain a Best Management Practices (BMP) Plan, which addresses the following activities at the facility.

- a. Feed management. The discharger must use efficient feed management and feeding strategies, which minimize the accumulation of uneaten food beneath the pens. Feed monitoring and management practices may include: use of real time feed monitoring, monitoring of sediment quality beneath the pens, capture of waste feed and feces, or other good husbandry practices.
- b. Waste collection and disposal. The discharger must collect, return to shore, and properly dispose of all feed bags, packaging materials, waste rope and netting.
- c. Feed management. The discharger must minimize any discharge associated with the transport or harvesting of aquatic animals.
- d. Transport or harvest discharge. The discharger must minimize any discharge associated with the transport or harvesting of aquatic animals.
- e. Carcass removal. The discharger must remove and dispose of aquatic animal mortalities on a regular basis.
- f. Materials storage. The discharger must properly store drugs, pesticides, and feed in a manner to prevent spills, and implement procedures for containing, cleaning, and disposing of any spilled material.
- g. Maintenance. The discharger must inspect, conduct regular maintenance of, and repair the production and wastewater treatment systems on a routine basis.
- h. Recordkeeping. The discharger must document feed amounts and numbers and weights of aquatic animals to calculate feed conversion ratios, and document the frequency of net changes, inspections, and repairs.
- i. Training. The discharger must train personnel in spill prevention and response and on the proper operation and cleaning of production and wastewater treatment systems.

In the process of developing effluent limitations guidelines, EPA identified an extensive list of pollutants of concern in discharges from the aquaculture industry, including several metals, nutrients, solids, BOD, bacteria, drugs, and residuals of federally registered pesticides. EPA did not include specific numerical limitations in the Effluent Limitations Guidelines, however, for any pollutants on this list, believing that best management practices would provide acceptable control of these pollutants. EPA did conclude during the development of the Effluent Limitations Guidelines that control of suspended solids

would also effectively control concentrations of other pollutants of concern, because other pollutants are either bound to the solids or are incorporated into them. And, although certain bacteria are found at high levels in effluents from settling basins, EPA concluded that disinfection is not economically achievable.

2. State of Washington, Minimum Discharge Standards for Fish Hatcheries, Washington Administrative Code § 173-221A-100

The State of Washington requires wastes to be provided with all known, available, and reasonable methods of treatment prior to their discharge or entry into waters of the State, regardless of the quality of water to which wastes are discharged or proposed for discharge, and regardless of the minimum water quality standards established for those waters. (Wash. Rev. Code § 90.52.040) To implement this requirement, the Washington Department of Ecology (Ecology) has established the following technology-based effluent limitations for the upland finfish industry (WAC 173-221A-100) and for marine finfish rearing facilities. (WAC 173-221A-110).

Ecology requires permits for upland finfish facilities (defined as facilities not located within waters of the State, where finfish are hatched, fed, nurtured, held, maintained, or reared to reach the size of release or for market sale), which:

- a. produce more than 20,000 pounds (net) per year, or
- b. feed more than 5000 pounds of fish food during any calendar month, or
- c. are designated as a significant contributor of pollution by DOE in accordance with 40 CFR 122.24.

Ecology does not require discharge permits for facilities that do not meet one of these criteria; however, all facilities, regardless of size, must comply with the following effluent limitations and other requirements.

**Table V-4. Effluent Limitations for Discharges from Upland Facilities (Except Those Discharges Limited by Table V-5)**

	Monthly Average	Instantaneous Maximum
Net Suspended Solids (mg/L)	5	15
Net Settleable Solids (ml/L)	0.1	-

**Table V-5. Discharges from Off Line Settling Basins and From Rearing Ponds During Fish Release**

	Removal Efficiency <sup>1</sup>	Instantaneous Maximum
Net Suspended Solids	85 %	100 mg/L
Net Settleable Solids	90 %	1.0 ml/L

<sup>1</sup> Applies only to offline settling systems.

Ecology has also established the following specific treatment requirements for upland finfish facilities.

1. For facilities that use vacuum cleaning, standpipe bottom drain, or other systems to remove solids, offline treatment of wastewater is required.
2. Facilities that provide inline settling must be designed to minimize short circuiting and to provide at least a twenty year sludge storage capacity, unless provision is made for periodic sludge removal without interruption of treatment.
3. No additional treatment is required for rearing ponds, provided the rearing pond has a minimum retention time of two hours.
4. Facilities constructed after September 1, 1990 or expanded by fifty percent after the effective date of the Ecology rule must line settling ponds or demonstrate that operation of the facility will not have an adverse impact upon ground water.

And, Ecology requires the following general practices of all upland facilities.

1. Sand, silt, mud, solids, sludges, filter backwash, debris, or other pollutants deposited or removed in the course of treatment must be disposed of in a manner to prevent such materials from entering waters of the State.
2. The discharge of untreated cleaning waste is prohibited.
3. The intentional discharge or sweeping of accumulated solids from raceways or ponds to waters of the State without treatment is prohibited.
4. Practices, such as removing dam boards in raceways or ponds, that allow accumulated solids to discharge to waters of the State are prohibited.
5. Disease control chemicals and drugs must be approved by the FDA and/or the EPA for use in aquaculture facilities, and the use of such materials must be done in conformance with label instructions. If not used according to label instructions, such materials must be used under the supervision of a veterinarian after approval of DOE.
6. Fish mortalities, kill spawning, processing wastes, and any leachate from these materials shall be disposed of in a manner so as to prevent such materials from entering the waters of the State.

Ecology also requires completion of a Receiving Water Quality Study by upland facilities constructed after September 1, 1990, or expanded by fifty percent after the effective date of the Ecology rule, or by any existing facility at the discretion of Ecology. The comprehensive study is meant to identify any possible deleterious impact on the beneficial uses of receiving waters.

At WAC 173-221A-110, Ecology has established waste discharge standards for finfish rearing facilities located within marine waters. Discharge permits are required for facilities that:

1. produce more than 20,000 pounds (net) per year, or
2. feed more than 5,000 pounds of fish food during any calendar month, or
3. are designated as a significant contributor of pollution by the Ecology in accordance with 40 CFR 122.24.

Ecology does not require discharge permits for facilities that do not meet one of these criteria; however, all marine facilities, regardless of size, must comply with certain effluent limitations and other requirements, including the following.

1. Discharges must comply with all applicable State water quality standards and sediment quality standards.
2. Fish food must be dispersed in a manner which maximizes ingestion by the reared fish.
3. Disease control chemicals and drugs that may be discharged must be approved for use in aquaculture facilities by the FDA and/or the EPA; and the use of such materials must be done in conformance with label instructions. If not used according to label instructions, such materials must be used following approved INAD protocols or under the supervision of a veterinarian after approval of DOE.
4. Fish mortalities, harvest blood, and any leachate from these materials shall be stored and disposed of in a manner so as to prevent such materials from entering waters of the State.
5. Accumulated solids and attached marine growth contained within or on the finfish rearing units shall be disposed of in a manner which prevents, to the maximum extent practicable, these materials from entering or reentering waters of the State.
6. The discharge of accumulated solids and marine growth, removed from the finfish rearing units without treatment, into waters of the State is prohibited.
7. All marine finfish rearing facilities must develop a Pollution Prevention Plan to address operating, spill prevention, solid waste, and storm water discharge practices to prevent or minimize the release of pollutants from the facility.

Ecology also requires completion of an Environmental Study by marine facilities constructed after September 1, 1990 or expanded by fifty percent after the effective date of the Ecology rule, or by any existing facility at the discretion of Ecology. The Environmental Study is meant to identify any possible impact of discharges on water and sediment quality.

3. State of Washington, Department of Ecology, Upland Finfish Hatching and Rearing General NPDES Permit (2000)

Because this general permit implements the technology-based requirements for the upland finfish industry, established at WAC 173-221A-100, it includes the same numeric limitations for suspended and settleable solids as the regulations. It also includes a limitation of 0.019 mg/L chlorine in discharges of rearing vessel disinfection water, requires development of a Pollution Prevention Plan, and contains extensive reporting regarding the use of disease control drugs and chemicals. Although permit requirements are applicable only to those facilities that meet minimum threshold requirements (20,000 pounds production; 5,000 pounds of feed during the calendar month of greatest feeding; or designated as a significant contributor of pollution by Ecology in accordance with 40 CFR 122.24), all upland facilities must still comply with Ecology regulations at WAC 173-221A-100.

In developing the general permit, Ecology determined that limits for settleable and suspended solids would effectively control BOD and nutrients in discharges from finfish facilities. The agency also prohibited the discharge of disease control chemicals and drugs in concentrations that exceeded federal or State water quality standards and found that BMPs to minimize concentrations of these chemicals in discharges would provide effective control.

4. U.S. EPA Region 10 General NPDES Permit for Aquaculture Facilities and Associated On-Site Fish Processors in Idaho

*Net pen regulation?*

Following assessments of fish hatchery effluents and associated receiving water quality in Idaho in 1977 and 1984, EPA Region 10 adopted General Permit No. ID-G13-0000, applicable to aquaculture facilities in Idaho. This general permit covers facilities that produce 20,000 pounds of fish per year or feed 5,000 pounds or more during the calendar month of maximum feeding. It established numerical effluent limitations for net suspended and settleable solids and phosphorus and included extensive reporting requirements for certain facilities.

At the time this permit was written, EPA believed that residual disease control drugs and other chemicals delivered to fish by ingestion did not pose a risk of harm or degradation to aquatic life or other beneficial uses, (although EPA acknowledged suggestions in the literature that there may be some significant risks associated with such discharges). On the other hand, EPA believed that chemicals applied in solution for the emersive treatment of fish may present a risk of harm to aquatic life, including threatened or endangered species, immediately downstream of a point of discharge. No data, however, existed to support the development of water quality based effluent limitations for such chemicals. EPA also determined that normal operating procedures at aquaculture facilities should provide for maximum dilution in the discharge of such emersive chemical treatments. Therefore, rather than impose end-of-pipe limits on chemicals which were difficult to analyze, EPA required whole effluent toxicity (WET) testing of the discharges, pending analysis of chemical usage data submitted by facilities in the first year of the permit. If the analysis showed reasonable potential to cause or contribute to an instream excursion above the State's toxic substances criteria, the permit requires that WET testing be conducted by the largest facilities.

Regarding disinfectants, EPA Region 10 also believed that disinfectants applied for treatment, cleansing and disinfection of facilities and their equipment may present a risk of harm to aquatic life, including threatened or endangered species, immediately downstream of a point of discharge; however, no data existed to support the development of water quality based effluent limitations for such chemicals. EPA also determined that normal operating procedures at aquaculture facilities should provide for maximum dilution in the discharge of disinfectants. Therefore, rather than impose end-of-pipe limits on chemicals which are expensive and difficult to analyze, EPA may require WET testing of the discharges associated with disinfectants, pending analysis of chemical usage data.

All dischargers authorized under the Idaho General Permit are required to perform an Effluent Characterization Study during the first 18 months after receiving authorization to discharge. The study characterizes discharges in terms flow, TSS, settleable solids, total phosphorous, total nitrate plus nitrite, total ammonia, kjeldahl nitrogen, dissolved oxygen, and temperature. Certain large facilities must also report on the usage of drugs, disinfectants, and other chemicals; and if EPA's analysis of this information suggests a reasonable potential for a discharge to cause an exceedance of applicable water quality criteria, EPA can require WET testing. These same larger facilities must also complete a Best Management Practices and Waste Treatment Efficiency Study to assess the effectiveness of best management practices and waste treatment systems and practices employed for reducing pollutant loads to receiving waters.

5. Oregon General NPDES Permit Number 300J

*Net pen regulation?*

Oregon General NPDES Permit Number 300J, effective October 16, 2002, is applicable to aquatic animal production facilities that produce at least 20,000 pounds of fish per year but have less than 300,000 pounds on hand at any time. The permit establishes numerical limitations for suspended and settleable solids, pH, and temperature and authorizes a mixing zone that extends 30 feet downstream from the point of discharge that does not exceed half of the receiving stream width. This general permit also requires reporting of drug and chemical usage and development/implementation of a Pollution Prevention Plan.

D. Evaluation of Water Quality-Based Limitations

Section 301 (b) (1) (C) of the CWA and its implementing regulations at 40 CFR 122.44 (d) require permits to include limits for all pollutants or parameters, which are or may be discharged at a level which will cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality. If such WQBELs are necessary, they must be stringent enough to ensure that water quality standards are met, and they must be consistent with any available waste load allocation. For pollutants with technology-based limits, EPA must also determine whether the technology-based limits will be protective of the corresponding water quality criteria.

E. Proposed Effluent Limitations and Requirements for Discharges from Fish Hatcheries Located on Tribal and Federal Lands in Washington

1. Scope. The proposed General Permit will cover all fish hatcheries which do not meet the size threshold of EPA's Effluent Limitations Guidelines codified at 40 CFR 451, including facilities that hold or rear cold and warm water species; that utilize flow through, pond, recirculating, or net-pen production facilities; and that discharge to fresh or marine waters. The General Permit proposes effluent limitations, reporting requirements, and/or other permit conditions applicable to all covered discharges as well as specific limitations and requirements for the following three categories of dischargers.

- a. All small fish hatcheries that produce less than 20,000 pounds fish per year (net) and feed less than 5,000 pounds feed per month during the calendar month of maximum feeding.
  - b. Large fish hatcheries that produce 20,000 pounds fish per year (net) or more or feed 5,000 pounds feed per month or more during the calendar month of maximum feeding, excluding large net pen production facilities.
  - c. Large net pen production systems.
2. All Facilities. All fish hatcheries are required to submit an NOI to EPA and then to submit an Annual Production and Discharge Report—a brief report that describes the previous year's production, feed rates, use of aquaculture drugs and chemicals, and the facilities efforts to adhere to required operating practices.
  3. Small Fish Hatcheries. All facilities that produce less than 20,000 pounds per year (net) and that feed less than 5,000 pounds per month during the calendar month of maximum feeding are required to adhere to a set of narrative operating limitations and best management practices. The operating limitations and best management practices are derived from EPA's Effluent limitations Guidelines and from the State of Washington's general permit for fish hatcheries and represent sound operating procedures to reasonably minimize the discharge of pollutants to receiving waters.
  4. Large Fish Hatcheries. All facilities that produce 20,000 pounds per year (net) or more or that feed less 5,000 pounds per month or more during the calendar month of maximum feeding are required to report certain events to EPA, including the use of an Investigational New Animal Drug or the extra label use of an aquaculture drug, failures in containment systems that result in unanticipated releases of pollutants, and spills of drugs and pesticides that result in their release to receiving waters.

All large facilities, excluding net pen production systems, must conduct an Effluent Characterization Study; adhere to the following numerical effluent limitations for suspended and settleable solids, copper, and chlorine; and develop a Pollution Prevention Plan to implement the operating limitations and best management practices required by the permit.

Effluent Limitations for Suspended and Settleable Solids (All discharges except discharges from separate offline settling systems and discharges from pond systems that occur during harvest or fish release events)

Pollutant	Avg Monthly Effluent Limitation (AMEL)	Instantaneous Max
Net TSS*	5 mg/L	15 mg/L
Net Settleable Solids*	0.1 ml/L	-

Effluent Limitations for Suspended and Settleable Solids (Discharges from separate offline settling systems and discharges from pond systems that occur during harvest or fish release events)

Pollutant	Removal Efficiency	Instantaneous Max
Net TSS*	85 %	100 mg/L
Net Settleable Solids*	90 %	1.0 ml/L

#### Effluent Limitations for Chlorine

Receiving Water	Max Daily Effluent Limitation (MDEL)	AMEL
Fresh Water	18 :g/L	9.0 :g/L
Marine Water	12 :g/L	6.1 :g/L

#### Effluent Limitations for Copper - Fresh Water

Receiving Water Hardness - Fresh Water (mg/L CaCO <sub>3</sub> )	MDEL (:g/L)	AMEL (:g/L)
20	3.9	1.9
30	5.7	2.8
40	7.5	3.7
50	9.2	4.6
75	14	7.0
100	18	9.0
150	26	13
200	34	17
250	42	21

**Effluent Limitations for Copper - Marine Water**

Discharge to Marine Waters	MDEL (:g/L)	AMEL (:g/L)
Copper	5.8	2.9

Large net pen production facilities must develop a Pollution Prevention Plan to implement the operating limitations and best management practices required by the permit.

**VI. MONITORING AND REPORTING REQUIREMENTS**

In accordance with Section 308 of the CWA and EPA regulations at 40 CFR 122.44 (i), monitoring requirements are included in an NPDES permit to determine compliance with effluent limitations, to gather data for future effluent limitations, and/or to monitor impacts on the receiving water. In addition to routine monitoring certain dischargers authorized to discharge under the General Permit will be required to complete an Effluent Characterization Study, as described below.

**A. Effluent Characterization Study**

Within eighteen months after becoming authorized to discharge under the General Permit, facilities that produce 20,000 pounds or more per year (net) or that feed 5,000 pounds or more per month during the calendar month of maximum feeding, excluding net pen production facilities, must complete an Effluent Characterization Study to include the following monitoring conducted over a consecutive twelve month period. Results must be reported to EPA Region 10.

**Table VI-1, Effluent Characterization Study - Monitoring Requirements**

**Monitoring Requirements - Effluent Characterization Study**

Parameter	Units	Monitoring Frequency	Sampling Location <sup>1</sup>	Type of Sample
Flow	cfs, gpd, or mgd	quarterly	effluent	meter, calibrated weir, or other approved method
TSS	mg/L	quarterly	influent and effluent	composite
Settleable Solids	mg/L	quarterly	influent and effluent	composite
Total Phosphorous	mg/L	quarterly	influent and effluent	composite

Nitrite	mg/L	quarterly	influent and effluent	composite
Nitrite	mg/L	quarterly	influent and effluent	composite
Ammonia	mg/L	quarterly	influent and effluent	composite
Dissolved Oxygen	mg/L	quarterly	effluent	meter
Temperature	B <sub>F</sub>	quarterly	effluent	meter

Influent samples shall be representative of incoming water before entry to the production facility, and shall be collected within 24 hours prior to collection of effluent samples. Effluent samples shall be collected immediately before the point(s) of discharge to the receiving water(s).

As part of the Effluent Characterization Study, authorized dischargers must also maintain records of chemical and drug usage over the same twelve month period and summarize this information for inclusion in the report to EPA.

#### B. Routine Monitoring Requirements

Routine monitoring, as presented in table VI-2, is required only of large fish hatcheries, excluding net pen production facilities. Proposed monitoring frequencies and sample types for these facilities represent the minimum sampling frequency required to adequately characterize effluent and to adequately monitor facility performance

**Table VI-2. Routine Monitoring Requirements**

	Sample Type	Facility Production (lbs/yr)	
		< 100,000	≥ 100,000
Effluent Flow	meter, calibrated weir, or other approved method	quarterly	monthly
Net TSS <sup>1</sup>	Composite or grab	quarterly	monthly
pH		quarterly	monthly
Chlorine <sup>2</sup>		quarterly	monthly
Copper <sup>2</sup>		quarterly	monthly

<sup>1</sup> Net TSS determination will require influent analysis for TSS in addition to analysis of effluent. Influent samples shall be collected within 24 hours prior to collection of effluent samples; and net TSS shall be determined by subtracting the influent TSS concentration from the effluent TSS concentration.

<sup>2</sup> Chlorine and copper shall be monitored only when chlorine and copper compounds are being used, and they are potentially being discharged, giving consideration to retention times through the facility. Monitoring for copper and chlorine does not need to occur more frequently than the interval indicated by Table VI-2.

All analyses required by the General Permit must be analyzed in accordance with methods and procedures established at 40 CFR 136. Routine monitoring requirements may be satisfied with appropriate data generated by an Effluent Characterization Study.

## **VII. POLLUTION PREVENTION PRACTICES**

The Clean Water Act authorizes and EPA regulations at 40 CFR 122.44 (k) require best management practices or Pollution Prevention Plans in NPDES permits to control or abate the discharge of pollutants whenever necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. For many facilities, these measures are included in an operation & maintenance manual. Best management practices are important tools for waste minimization and pollution prevention, and EPA encourages facilities to incorporate best management practices into their O&M plans and to revise them as new practices are developed.

The proposed General Permit requires all dischargers to adhere to specific operating limitations and best management practices and requires certain dischargers to develop and implement a Pollution Prevention Plan within six months of becoming authorized to discharge under its terms. Dischargers must identify and assess potential impacts of pollutant discharges and identify specific management practices and operating procedures to prevent or minimize the generation and discharge of pollutants. The Pollution Prevention Plan must also address the specific operating limitations and best management practices listed in the General Permit.

The Pollution Prevention Plan must be amended whenever there is a change in the facility or its operation, which materially increases the potential for discharges of pollutants. The Pollution Prevention Plan will become an enforceable condition of the permit.

## **VIII. STANDARD PERMIT PROVISIONS**

Section IV, VI, and VII of the draft permit contain standard regulatory language that is required to be in all NPDES permits. These permit provisions are based largely upon 40 CFR Part 122, Subpart C and include requirements pertaining to monitoring, recording, reporting, and compliance responsibilities.

- § Duty to Comply from 40 CFR 122.41(a)
- § Proper Operation and Maintenance from 40 CFR 122.41(e)
- § Duty to Mitigate from 40 CFR 122.41(d)
  - § Toxic Pollutants from 40 CFR 122.41(a)(1-2), 122.44(b, e), and 125.3
  - § Removed Substances from 40 CFR §122.41(a)(1) and (o) and CWA 405(A)
- § Need to Halt or Reduce Activity not a Defense from 40 CFR 122.41(c)
  - § Bypass of Wastewater Treatment from 40 CFR 122.41(m)
  - § Upset Conditions from 40 CFR 122.41(n)
  - § Inspection and Entry from 40 CFR 122.41(i)
  - § Penalties for Violations of Permit Conditions from 40 CFR 122.41(a)(2-3)
  - § Duty to Provide Information from 40 CFR 122.41(h)
  - § Records Contents from 40 CFR 122.41(j)(3)
- § Submittal of Reports from 40 CFR 122.41(h, j, and l)
- § Retention of Records and Reports from 40 CFR 122.41(j)(2)
- § On-Site Availability of Records and Reports from 40 CFR 122.41(i)(2)
  - § Availability of Reports for Public Review from 40 CFR 122.1(e) and 122.7(1) and 40 CFR 2.101
- § Planned Changes from 40 CFR 122.41(l)(1)
  - § Changes in the Discharge of Toxic Substances from 40 CFR 122.42(a)
  - § Anticipated Noncompliance from 40 CFR 122.41(l)(2)
  - § Reporting of Noncompliance from 40 CFR 122.41(l)(6-7) and 122.44(g)
  - § Permit Actions from 40 CFR 122.44(c) and 40 CFR 122.61 - 122.64
  - § Duty to Reapply from 40 CFR 122.41(b)
  - § Incorrect Information and Omissions from 40 CFR 122.41(l)(8)
  - § Signatory Requirements from 40 CFR 122.41(k)
  - § Property Rights from 40 CFR 122.41(g)
  - § Transfers from 40 CFR 122.41(l)(3)
  - § Oil and Hazardous Substance Liability from 40 CFR 125.3, 40 CFR Part 300, 33 CFR 153.10(e), and Section 311 of the CWA
  - § State Laws from 40 CFR § 122.1(f) and section 510 of the Act, and
  - § Reopening of the Permit from 40 CFR 122.41(f) and 122.44(c).

## **IX. OTHER REQUIREMENTS**

### **A. Endangered Species Act**

The Endangered Species Act at 16 U.S.C. § 1536 requires EPA to consult with the appropriate agencies of the Department of Interior, Department of Commerce, and/or Department of Agriculture to insure that this NPDES permitting activity will not jeopardize the continued existence of any endangered or threatened species, or of any species proposed to be listed as endangered or threatened, or result in the destruction or adverse modification of critical habitat for such species.

To address the requirements of the Endangered Species Act, EPA has prepared a biological evaluation, which will be reviewed by the NOAA Fisheries and the U.S. Fish and Wildlife Service for consistency with those programs established for the conservation of endangered and threatened species.

**B. Magnuson - Stevens Fishery Conservation and Management Act**

The mandate of the Magnuson - Stevens Act at 16 U.S.C. § 1855 (b) (2) requires EPA to consult with the NOAA Fisheries to insure that this NPDES permitting activity will not adversely affect essential fish habitat. To address the requirements of the Magnuson - Stevens Act, EPA has prepared a biological evaluation, which will be reviewed by the NOAA Fisheries for consistency with the objective of protection of essential fish habitat.

**C. National Environmental Policy Act (NEPA)**

At 42 U.S.C. § 4322, NEPA requires federal agencies to conduct environmental review of their actions (including permitting activity) that may significantly affect the quality of the human environment. EPA regulations which implement NEPA, at 40 CFR 122.29 (c), clarify this requirement as it pertains to NPDES permitting actions as requiring NEPA environmental review for the issuance of an NPDES permit for new sources only.

A new source is defined at 40 CFR 122.2 as any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:

- (a) After promulgation of standards of performance under Section 306 of the CWA, which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with Section 306 of the CWA, which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

Because such standards of performance pursuant to Section 306 of the CWA, applicable to discharges concentrated aquatic animal production facilities, have not been promulgated (finalized) and were proposed more than 120 days ago (September 12, 2002), the criteria for "new sources" is not met by any CAAP facility eligible for coverage under the General Permit. NEPA environmental review is not required for the General Permit.

**D. State Certification**

The CWA, at 33 U.S.C. § 1341, requires certification from Washington Department of Ecology and appropriate tribal authorities that discharges authorized under the General Permit will comply with applicable provisions of the Act, including State and tribal water quality standards adopted pursuant to those applicable provisions. The General Permit cannot become effective until those entities have waived or granted certification; and therefore, EPA has requested Ecology and appropriate tribal authorities to review and certify the General Permit in accordance with procedures established at 40 CFR 124.53, 124.54, and 123.55.

## **X. REFERENCES**

Proposed Rule, Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category, 67 Fed. Reg. 57872 (Sept. 12, 2002).

USEPA Region 10 (1999), NPDES Permit No. ID-G13-0000 and Fact Sheet, Authorization to Discharge from Aquaculture Facilities in Idaho.

Oregon Department of Environmental Quality (2002), NPDES General Permit/Waste Discharge Permit No. 300J and Fact Sheet, Authorization to Discharge from Aquatic Animal Production Facilities.

USEPA (1991). Technical Support Document for Water Quality-Based Toxics Control. Office of Water, Washington, D.C. EPA/505/2-90-001.

USEPA (1993). Guidance Manual for Developing Best Management Practices (BMP). Office of Water, Washington, D.C. EPA 833-B-93-004 (October 1993).

USEPA (1996). NPDES Permit Writers' Manual. Office of Wastewater Management, Washington, D.C. EPA/833/B-96-003.

## Appendix A—basis for Effluent Limitations

### A. Statutory and Regulatory Basis For Limits

Sections 101, 301(b), 304, 308, 401, 402, and 405 of the Clean Water Act (CWA) provide the basis for effluent limitations and other conditions in the draft permit. EPA evaluates the discharges with respect to these sections of the CWA and relevant NPDES regulations to determine which conditions to include in the draft permit.

In general, EPA first determines which technology-based limits must be incorporated into the permit. EPA then evaluates the effluent quality expected to result from these controls to see if water quality standards for the receiving waters may still be exceeded. If exceedances could occur, EPA must include WQBELs in the permit. The proposed permit limits will reflect whichever limits (technology-based or water quality-based) are more stringent.

### B. Technology-Based Evaluation

Section 301(b) of the CWA requires industrial dischargers to meet technology based effluent limitations established by EPA. The CWA initially focused on the control of traditional pollutants (conventional pollutants and some metals) through the use of best practicable control technology currently available (BPT). Section 301(b)(1)(A) of the CWA required industries to meet this level of control by July 1, 1977. Section 301(b)(3) of the CWA allowed a deadline for achieving BPT of March 31, 1989 under certain circumstances, but that deadline has also passed. All permits issued after March 31, 1989 must include any conditions necessary to ensure that BPT is achieved.

Section 301(b)(2) of the CWA requires that all permits contain effluent limitations which: (1) control toxic pollutants and non-conventional pollutants through the use of best available technology economically achievable (BAT), and (2) represent best conventional pollutant control technology (BCT) for conventional pollutants by March 31, 1989. In no case may BCT or BAT be less stringent than BPT.

In many cases, BPT, BCT, and BAT limitations are based on effluent limitations guidelines (ELGs) developed by EPA for specific industries. Where EPA has not yet developed guidelines for a particular industry or a particular pollutant, technology based effluent limits must be established using best professional judgment (BPJ) (40 CFR 122.43, 122.44, and 122.53). Because the ELGs, which became effective on August 29, 2004, are applicable to facilities that produce more than 100,000 pounds annually, EPA has used BPJ to develop the technology-based effluent limitations in the draft General Permit for facilities that produce less than 100,000 pounds annually.

As described in D, below, technology-based limitations are proposed for suspended and settleable solids.

### **C. Water Quality-Based Evaluation**

In addition to the technology-based limits discussed above, EPA evaluated the potential discharges to determine compliance with Section 301(b)(1)(C) of the CWA and its implementing regulations at 40 CFR 122.44(d), which require permits to include limits for all pollutants or parameters which are or may be discharged at a level which will cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality. The limits must be stringent enough to ensure that water quality standards are met and must be consistent with any available waste load allocation. For pollutants with technology-based limits, EPA must also determine if those limits are protective of the corresponding water quality criteria.

In addition to WQBELs for pollutants that could cause or contribute to exceedances of standards, EPA must consider applicable antidegradation policies, which must be consistent with the guidelines expressed at 40 CFR 131.12. The draft General Permit will not result in the relaxation of effluent limits and has been written to maintain or improve the quality of effluent discharged from authorized CAAP facilities; and therefore, it will not result in degradation of water quality and is consistent with the guidelines expressed at 40 CFR 131.12.

To determine a WQBEL, when necessary, EPA uses the following approach.

#### **1. Determine Appropriate Water Quality Criteria**

Receiving waters on federal land in the State of Washington must meet water quality criteria established by the State of Washington in Chapter 173-201A of the Washington Administrative Code. If water quality criteria have been established by a Tribe (e.g., the Confederated Tribes of the Colville Reservation) and approved by EPA, receiving waters on tribal land must meet those applicable water quality criteria. For waters on tribal land, where water quality criteria have not been approved by EPA, the General Permit requires that receiving waters meet the quality criteria established by the State of Washington, as such criteria will, at a minimum, be protective of downstream uses in State waters in accordance with 40 CFR 131.10.

#### **2. Develop Wasteload Allocation (WLA) Development**

A WLA may be developed to establish the allowable loading of each pollutant that may be discharged without causing or contributing to exceedances of water quality standards in receiving waters. WLAs can be established in three ways - mixing zone-based WLAs, TMDL-based WLAs, and end-of-pipe WLAs.

a. Mixing Zone-Based WLA

When the State or a tribe authorizes a mixing zone for a discharge, the WLA is calculated based on the available dilution at the edge of the mixing zone, background concentrations of pollutants, and the water quality criteria. Limitations of the General Permit do not allow for dilution and mixing zones, and therefore, mixing zone based WLAs are not appropriate.

b. TMDL-Based WLA

Where the receiving water quality does not meet applicable water quality standards, a WLA may be based on a total maximum daily load (TMDL) determination by the State or appropriate Tribal authority. A TMDL is the amount of a pollutant or pollutant property, from point, nonpoint, and background sources, including a margin of safety, that can be discharged to a receiving water without exceeding applicable water quality criteria. Section 303 (d) of the CWA requires development of TMDLs for water bodies that will not meet water quality standards, after technology-based limitations are imposed, to ensure that these waters will come into compliance with water quality standards. Where discharges are to receiving waters listed as impaired pursuant to CWA Section 303 (d), such discharges must be authorized by individual NPDES permits, and therefore TMDL-based WLAs are not appropriate for permittees authorized to discharge under the General Permit.

c. End-of-Pipe WLA

In circumstances where WLAs cannot be determined based on TMDLs or based on a mixing zone, the applicable water quality criteria may be applied as end-of-pipe WLAs.

3. Derive Water Quality Based Permit Limitations

After WLAs have been developed, EPA applies the statistical permit limit derivation approach described in Chapter 5 of the Technical Support Document (TSD) for Water Quality-Based Toxics Control, USEPA Office of Water (1991) (EPA/505/2-90-001) to establish maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs). This approach takes into account effluent variability, sampling frequency, water quality standards, and the difference in time frames between the monthly average and the daily maximum limits.

As described in D, below, WQBELS are included in the proposed General Permit for copper and chlorine.

**D. Proposed Effluent Limitations**

This discussion includes description of the basis for each of the technology-based or water quality-based effluent limitations in the proposed permit.

#### Production Threshold for Limitations

In 1983, EPA defined cold water concentrated aquatic animal production (CAAP) facilities subject to the NPDES permit program as facilities that produce 20,000 pounds per year or more or that feed 5,000 pounds per month or more during the calendar month of maximum feeding. Warm water CAAP facilities were defined to include only facilities that produce 100,000 pounds or more per year. [48 Fed. Reg. 14153 (April 1, 1983), as codified at 40 CFR 122.24]. The State of Washington requires coverage under its Upland Finfish Hatching and Rearing NPDES Waste Discharge Permit for CAAP facilities that produce more than 20,000 pounds per year or that feed more than 5,000 pounds of fish food in any one calendar month; however, the State's technology based effluent limitations at WAC 173-221A-100 and WAC 173-221A-110 are applicable to all CAAP facilities, regardless of size.

For the General Permit EPA Region 10 proposes to require all dischargers from CAAP facilities to seek coverage under the General Permit, regardless of facility size (production and feed rate) and species (warm vs cold water). Small facilities that produce less than 20,000 pounds per year and all net-pen production facilities will be required to provide basic information through submittal of a Notice of Intent (NOI). They will be required to adhere to basic discharge operating limitations and best management practices. These facilities will also be required to submit an Annual Production and Discharge Report, which will allow EPA Region 10 to track activities at these facilities and to evaluate the need for greater restrictions on their discharges. For all facilities that produce 20,000 pounds per year or more or that feed 5,000 pounds per month or more during the calendar month of maximum feeding, excluding net pen production systems, the General Permit requires adherence to a set of operating limitations and best management practices and imposes limitations that are detailed below.

In the final Effluent Limitations Guidelines for the Concentrated Aquatic Animal Production Point Source Category (40 CFR 451) EPA did not include limitations for CAAP facilities that produce below 100,000 pounds annually. The principle reason cited for this exclusion was that the smaller size facilities could experience compliance costs of 5 percent or more of revenue. In developing General Permit No. WAG-XX-XXXX, EPA Region 10 is relying on its experience in administering the General Permit for Idaho and the State of Oregon's experience in administering its General Permit. The Oregon DEQ has determined that all facilities authorized to discharge under its General Permit consistently meet stringent limitations for suspended and settleable solids. The reason given for infrequent noncompliance with suspended solids limits is widely fluctuating levels of suspended solids within the source water supplies caused by precipitation events.

Because the experience of EPA Region 10 in Idaho and of the State of Oregon has not shown a disproportionate or unreasonable burden of compliance for CAAP facilities with annual production between 20,000 and 100,000 pounds, EPA Region 10 proposes that the threshold for comprehensive limitations under General Permit No. WAG-XX-XXXX be production of 20,000 pounds per year or more or feeding of 5,000 pounds per month or more during the calendar month of maximum feeding. Coverage of the very small facilities, with annual production less than 20,000 pounds per year, including less comprehensive requirements, represents greater control of discharges from such facilities than has been imposed by other general permits reviewed by EPA Region 10, without disproportionate burden to those facilities.

The General Permit will not apply to facilities that produce greater than 100,000 pounds per year (i.e., those facilities that will be subject to the effluent limitations guidelines of 40 CFR 451.) EPA believes that most, if not all tribal facilities, are below this production threshold, and any facilities that are above the threshold warrant the closer attention that will occur through issuance of an individual permit.

#### Transport Water

Fish hatcheries will commonly transport fish in 500 - 1000 gallon, truck mounted tanks for release to the wild. Because these fish, in theory, can be caught and eaten immediately following their release, the transport water cannot contain aquaculture drugs and/or chemicals, for which FDA requires a withdrawal period prior to human consumption. Such tanks are typically equipped only to provide life support (oxygen) to the fish while they are in transit. The only chemical routinely added to the transport water is salt, at 0.8 percent, to provide an isotonic transport medium, which is comfortable for the fish. The General Permit does not address the discharge of transport water; however, EPA Region 10 has determined that due to FDA restrictions regarding what materials can be present in such waters and due to the significant dilution that such discharges receive, there will be no adverse impacts associated with the discharge of transport water.

#### Total Suspended and Settleable Solids

There are no (final) technology-based effluent limitations guidelines for suspended and settleable solids in discharges from CAAP facilities. EPA Region 10 has therefore used BPJ to establish the following limitations for suspended and settleable solids in the proposed General Permit for discharges from large fish hatcheries, excluding net pen production systems.

**Table 1 - Effluent Limitations for Suspended and Settleable Solids** (All discharges except discharges from separate offline settling systems and discharges from pond systems that occur during harvest or fish release events)

Pollutant	Avg Monthly Effluent Limitation (AMEL)	Instantaneous Max
Net TSS*	5 mg/L	0.1 ml/L
Net Settleable Solids*	15 mg/L	-

**Table 2 - Effluent Limitations for Suspended and Settleable Solids** (Discharges from separate offline settling systems and discharges from pond systems that occur during harvest or fish release events)

Pollutant	Removal Efficiency	Instantaneous Max
Net TSS*	85 %	100 mg/L
Net Settleable Solids*	90 %	1.0 ml/L

\* Net results are determined by subtracting influent concentrations from effluent concentrations.

Proposed numeric limitations for TSS and settleable solids are consistent with the State of Washington's effluent limitations for all upland warm and cold water CAAP facilities at WAC 173-221A-100 and with the State's general NPDES permit for upland finfish hatching and rearing facilities. Here, EPA Region 10 believes that the basis for technology based permit limitations within the State of Washington's General Permit are applicable to tribal and federal facilities in Washington.

#### Nutrients

There are no applicable technology based limitations or effluent guidelines in place for the CAAP industry for nutrients (nitrogen and phosphorous). The State of Washington has established water quality criteria for nutrients in lakes (water bodies with a mean detention time of greater than 15 days) at